

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Sarkozy, et al.

Filed: 04/12/2001

Serial No.: 09/832,812



Attorney Docket: STO-05RI

Examiner: TBD

Art Unit: 2185

#5  
108  
2/23/02  
JC

For: **Apparatus and Method for Storing Data with Selectable Data Protection Using Mirroring and Selectable Parity Inhibition**

**INFORMATION DISCLOSURE**  
**STATEMENT**

February 7, 2002

Assistant Commissioner For Patents  
Washington, DC 20231

**MAILING CERTIFICATE**

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Natalie D. Swider  
Natalie D. Swider

2/7/02  
Date

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Dear Sir:

**Technology Center 2100**

Applicants wish to bring to the attention of the Patent and Trademark Office the information noted on the enclosed PTO-1449 forms, which may be considered material to the examination of the above-identified application.

To provide the Examiner with a context for reviewing the references, Applicants have split the references into three separate PTO-1449 forms, organized as follows:

- (1) PTO-1449 A (16 references) – references cited during Patent Owner's patent licensing negotiations and litigation (although not necessarily for the pending claims);
- (2) PTO-1449 B (8 references) – references cited during prosecution of the original 5,893,919 patent; and
- (3) PTO-1449 C (134 references) – references cited during prosecution of the Patent Owner's other patent applications.

No fee is believed due at this time because this Information Disclosure Statement is being filed before the mailing of the first Office Action. In the event that there are any fees due, please charge the same, or credit any overpayment, to Deposit Account No. 50-1065.

If the Examiner should have any questions, Applicants request that the Examiner contact Applicants' attorney at the address below.

Respectfully submitted,



Brian A. Carlson  
Attorney for Applicant  
Reg. No. 37,793

Slater & Matsil, L.L.P.  
Suite 1000  
17950 Preston Road  
Dallas, Texas 75252  
(972) 732-1001  
fax: (972) 732-9218

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**Complete if Known**

Application Number	09/832,812
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<b>Filing Date</b>	04/12/2001
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First Named Inventor	SARKOZY, et al.
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Group Art Unit	2185
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Examiner Name	TBD
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Attorney Docket Number	STO-05RI
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*(use as many sheets as necessary)*

Sheet	1	of	2
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U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
	1	5,301,297		Menon et al.	04/05/1994	
	2	5,392,244		Jacobson et al.	02/21/1995	
	3	5,469,453		Glider et al.	11/21/1995	
	4	5,524,204		Verdoorn, Jr.	06/04/1996	
	5	5,659,704		Burkes et al.	08/19/1997	RECEIVED
	6	5,699,503		Bolosky et al.	12/16/1997	FEB 14 2002
	7	5,774,641		Islam et al.	06/30/1998	Technology Center 2100
	8	6,073,222		Ohran	06/06/2000	
	9	6,076,142		Corrington et al.	06/13/2000	

## FOREIGN PATENT DOCUMENTS

[illegible]

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Date  
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<sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

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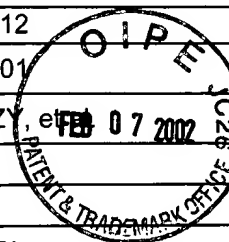
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Substitute for form 1449B/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>		<b>Complete if Known</b>			
		Application Number	09/832,812		
		Filing Date	04/12/2001		
		First Named Inventor	SARKOZY, et al		
		Group Art Unit	2185		
		Examiner Name	TBD		
Sheet	2	of	2	Attorney Docket Number	STO-05RI



OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	10	"Method for Background Parity Update in a Redundant Array of Inexpensive Disks (RAID)", IBM Technical Disclosure Bulletin, Oct. 1992, pp. 139-141.	
	11	"Host Operation Precedence with Parity Update Groupings for Raid Performance", IBM Technical Disclosure Bulletin, Mar. 1993, pp. 431-433.	
	12	"Parity Preservation for Redundant Array of Independent Direct Access Storage Device Data Loss Minimization and Repair", IBM Technical Disclosure Bulletin, Mar. 1993, pp. 473-478.	
	13	"LRAID: Use of Log Disks for an Efficient RAID Design", IBM Technical Disclosure Bulletin, Feb. 1994, pp. 19-20.	
	14	"Hybrid Reducdancy [sic] Direct-Access Storage Device Array with Design Options", IBM Technical Disclosure Bulletin, Feb. 1994, pp. 141-148.	
	15	"Performance Efficient Multiple Logical Unit Number Mapping for Redundant Array of Independent Disks", IBM Technical Disclosure Bulletin, May 1996, pp. 273-274.	
	16	WILKES, ET AL, "The HP AutoRAID Hierarchical Storage System", ACM Transactions on Computer Systems, Feb. 1996, Vol. 14, No. 1.	

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Sheet	1	of	2	Application Number	09/832,812
				Filing Date	04/12/2001
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				Group Art Unit	2185
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		Number	Kind Code <sup>2</sup> (if known)			
	1	5,519,844		Stallmo	05/21/1996	
	2	5,546,558		Jacobson, et al.	08/13/1996	
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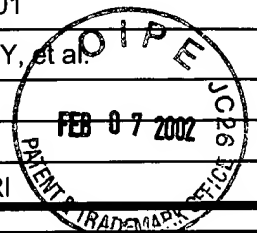
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		Filing Date	04/12/2001		
		First Named Inventor	SARKOZY, et al.		
		Group Art Unit	2185		
		Examiner Name	TBD		
Sheet	2	of	2	Attorney Docket Number	STO-05RI



OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	3	Massiglia, Paul, ed., "The RAIDbook, a Source Book for Disk Array Technology, 4 <sup>th</sup> ed.," 08/08/1994, pp. 3-22, 117-153, The RAID Advisory Board, St. Peter, MN	
	4	DEVOE, DEBORAH, "Vendors to unveil RAID storage systems." Storage Dimensions' SuperFlex 3000, Falcon Systems' ReetTime, (Brief Article), 03/25/1996, pp. 42(1), v18 n13, InfoWorld Publishing Company 1996.	
	5	"HP's Smart Auto-RAID Backup Technology" Newsbytes, 08/04/1995, pNEW08040012, Newsbytes Inc. 1995.	
	6	CROWTHERS, EDWARD and LEADER, JOE, "RAID technology advances to the next level," Computer Technology Review, 03/1996, pp. 46, v16 n3.	
	7	"Fault-Tolerant Storage for Non-Stop Networks," Storage Dimensions, 08/15/1995, pp.42-43.	
	8	"Super Flex 3000 Provides Dynamic Growth," InfoWorld, Product Review, 06/17/1996, v18 n25 pp.N13.	

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Sheet 1 of 10

## **Complete if Known**

Application Number	09/832,812
Filing Date	04/12/2001
First Named Inventor	SARKOZY, et al.
Group Art Unit	2185
Examiner Name	TBD
Attorney Docket Number	STO-05RI

## **U.S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
	1	3,449,718		Woo	06/10/1969	
	2	3,876,978		Bossen, et al.	04/08/1975	
	3	4,044,328		Herff	08/23/1977	
	4	4,228,496		Katzman, et al.	10/14/1980	
	5	4,410,942		Milligan, et al.	10/18/1983	
	6	4,425,615		Swenson, et al.	01/10/1984	
	7	4,433,388		Oosterbaan	02/21/1984	
	8	4,467,421		White	08/21/1984	
	9	4,590,559		Baldwin, et al.	05/20/1986	
	10	4,636,946		Hartung, et al.	01/13/1987	
	11	4,644,545		Gershenson	02/17/1987	
	12	4,656,544		Yamanouchi	04/07/1987	
	13	4,722,085		Flora, et al.	01/26/1988	
	14	4,817,035		Timsit	03/28/1989	
	15	4,849,929		Timsit	07/18/1989	
	16	4,849,978		Dishon, et al.	07/18/1989	
	17	4,903,218		Longo, et al.	02/20/1990	
	18	4,933,936		Rasmussen, et al.	06/12/1990	

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Sheet

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of

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Filing Date	04/12/2001
First Named Inventor	SARKOZY, et al.
Group Art Unit	2185
Examiner Name	TBD
Attorney Docket Number	STO-05RI

19	4,934,823		Okami	06/19/1990	
20	4,942,579		Goodlander, et al.	04/17/1990	
21	4,993,030		Krakauer, et al.	02/12/1991	
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24	5,134,619		Henson, et al.	07/28/1992	
25	5,197,139		Emma, et al.	03/23/1993	
26	5,210,824		Putz, et al.	05/11/1993	
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28	5,274,645		Idleman, et al.	12/28/1993	RECEIVED
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32	5,329,619		Pagé, et al.	07/12/1994	
33	5,367,647		Coulson, et al.	11/22/1994	
34	5,398,253		Gordon	03/14/1995	
35	5,412,661		Hao, et al.	05/02/1995	
36	5,416,915		Mattson, et al.	05/16/1995	
37	5,418,921		Cortney, et al.	05/23/1995	
38	5,420,998		Horning	05/30/1995	
39	5,423,046		Nunnelley, et al.	06/06/1995	

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Sheet

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of

10

Application Number 09/832,812

Filing Date 04/12/2001

First Named Inventor SARKOZY, et al.

Group Art Unit 2185

Examiner Name TBD

Attorney Docket Number STO-05RI

	40	5,440,716		Schultz, et al.	08/08/1995	
	41	5,483,419		Kaczeus, Sr., et al.	01/09/1996	
	42	5,495,607		Pisello, et al.	02/27/1996	
	43	5,499,337		Gordon	03/12/1996	
	44	5,519,831		Holzhammer	05/21/1996	
	45	5,519,853		Moran, et al.	05/21/1996	
	46	5,530,829		Beardsley, et al.	06/25/1996	
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	48	5,537,534		Voigt, et al.	07/16/1996	RECEIVED
	49	5,537,567		Galbraith, et al.	07/16/1996	FEB 14 2002
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	51	5,542,065		Burkes, et al.	07/30/1996	
	52	5,551,002		Rosich, et al.	08/27/1996	
	53	5,551,003		Mattson, et al.	08/27/1996	
	54	5,564,116		Arai, et al.	10/08/1996	
	55	5,568,628		Satoh, et al.	10/22/1996	
	56	5,572,659		Iwasa, et al.	11/05/1996	
	57	5,572,660		Jones	11/05/1996	
	58	5,581,726		Tanaka	12/03/1996	
	59	5,583,876		Kakuta	12/10/1996	
	60	5,586,291		Lasker, et al.	12/17/1996	

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Sheet

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of

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Application Number

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Filing Date

04/12/2001

First Named Inventor

SARKOZY, et al.

Group Art Unit

2185

Examiner Name

TBD

Attorney Docket Number

STO-05RI

	61	5,615,353		Lautzenheiser	03/25/1997	
	62	5,621,882		Kakuta	04/15/1997	
	63	5,632,027		Martin, et al.	05/20/1997	
	64	5,642,337		Oskay, et al.	06/24/1997	
	65	5,650,969		Nijima, et al.	07/22/1997	
	66	5,671,439		Klein, et al.	09/23/1997	
	67	5,689,678		Stallmo, et al.	11/18/1997	
	68	5,696,934		Jacobson, et al.	12/09/1997	
	69	5,720,027		Sarkozy, et al.	02/17/1998	
	70	5,732,238		Sarkozy	03/24/1998	
	71	5,742,762		Scholl, et al.	04/21/1998	
	72	5,758,074		Marlin, et al.	05/26/1998	
	73	5,787,459		Stallmo, et al.	07/28/1998	
	74	5,790,774		Sarkozy	08/04/1998	
	75	5,794,229		French, et al.	08/11/1998	
	76	5,944,789		Tzelnic, et al.	08/31/1999	
	77	6,098,128		Velez-McCaskey, et al.	08/01/2000	

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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 5 of 10

## Complete if Known

Application Number	09/832,812
Filing Date	04/12/2001
First Named Inventor	SARKOZY, et al.
Group Art Unit	2185
Examiner Name	TBD
Attorney Docket Number	STO-05RI

## FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				
	78	EP	0201330 A		Thinking Machines Corp.	11/12/1986		
	79	EP	0274817 A		Hartness	07/20/1988		
	80	GB	2086625 A		Western Electric	05/12/1982		
	81	JP	56-074807 A		Hitachi Seisakusho K.K.	06/20/1981	with English Abstract	
	82	JP	61-62920 A		Hitachi LTD.	03/31/1986	with English Abstract	
	83	JP	59-085564		Ricoh Co LTD	05/17/1984	with English Abstract	
	84	JP	63-278132		Matsushita Graphic Commun Syst Inc	11/15/1988	with English Abstract	
	85	JP	57-185554		Toshiba Corp.	11/15/1982	with English Abstract	
	86	JP	02-148125		Yokogawa Medical Syst LTD	06/07/1990	with English Abstract	
	87	JP	60-254318		Toshiba Corp	12/16/1985	with English Abstract	

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6

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First Named Inventor	SARKOZY, et al.
Group Art Unit	2185
Examiner Name	TBD
Attorney Docket Number	STO-05RI

### OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	88	MASSIGLIA, PAUL, "RAID Levels - Yesterday's Yardstick," Computer Technology Review, April 1996, pp. 42.	
	89	PATTERSON, DAVID A.; GIBSON, GARTH; and KATZ, RANDY H., "A Case for Redundant Arrays of Inexpensive Disks (RAID), Report No. UCB/CSD 87/391, December 1987.	
	90	BHARGAVA, BHARAT; FRIESEN, KARL; HELAL, ABDELSALAM; and RIEDL, JOHN, "Adaptability experiments in the RAID distributed database system," (Abstract only), Symposium on Reliability in Distributed Software and Database Systems, 10/1990, IEEE cat n 90CH2912-4, pp. 76-85.	
	91	KIM, MICHELLE Y., "Synchronized Disk Interleaving," IEEE Trans. on Computers, Vol. C-35, No. 11, Nov. 1986.	
	92	"LANser MRX100: Intelligent Disk Subsystem" Sanyo Icon, 1992, (2 pages).	
	93	"LANser MRX300: Intelligent Disk Subsystem" Sanyo Icon, 1992, (2 pages).	
	94	"LANser MRX500: Intelligent Disk Subsystem" Sanyo Icon, 1992, (2 pages).	
	95	"LANser MRX500FT: Fault Tolerant Intelligent Disk Subsystem" Sanyo Icon, 1992, (2 pages).	
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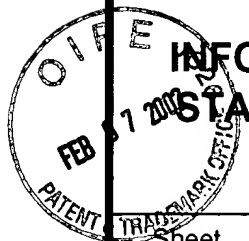
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First Named Inventor	SARKOZY, et al.
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Attorney Docket Number	STO-05RI



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100	IBM Technical Disclosure Bulletin, Vol. 24(2), July 1981, pp. 986-987, "Efficient Mass Storage Parity Recovery Mechanism," (Lawlor).	
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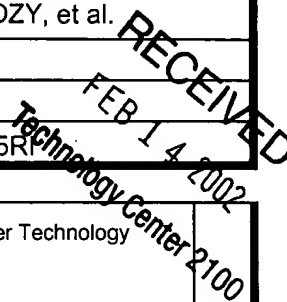
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Sheet 8 of 10

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Group Art Unit	2185
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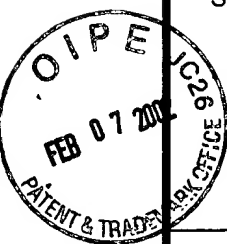
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